EGS 11—EGS Science Data System Performance Test

This test verifies the system-level performance of the EGS Science Data System in an operational environment at all DAACs. The operational activities consist of all activities (as applicable) at each DAAC, from ingest of Level 0 data from all AM 1 instruments, SAGE III, Landsat 7 L0R data from LPS, data production, archival, data access and data distribution. For this test the system will be configured to operate in "a day in the life of a DAAC" scenario, with normal daily operations (TBD based on the Science Operations Scenarios, and Release B0/B1 Technical Baseline).

No functional requirements are verified in this test, as they will have been verified in the system/subsystem/interface tests that precede this test.

The aim of the test is

- to verify EGS Science Data System performance when the ingest of all data streams, product generation, archival data access and distribution activities are being carried out concurrently, according to the normal daily operations schedule of the DAAC,
- to verify that the system performance is not affected during exception(s) handling (e.g., delay/error/non-availability of ancillary data or other products required by the PGEs, and
- to verify the increased performance capabilities for ingest, and archival as specified in the F&PRS.

The test will be conducted concurrently (in parallel) at all DAACs, or at each DAAC independently (TBD).

Test Objectives:

Test Case 1: Daily science operations performance verifications test

> *This test case verifies the performance of user data access, manipulation and data distribution, when the system is operational with concurrent ingest of L0 data, ancillary data, product generation, and archival, according to the daily operations plan. Performance of the following are verified:*
>
> - Science data product generation
> - Data access and manipulation
> - Data distribution

Test Case 2: Science data product generation performance during exceptions handling

Test Case 3 Landsat 7 data distribution

Test Case 4 Timely availability of archived data to the network

Test Case 5 Data search and order involving more than one DAAC

Test Case 6 User pull up to 2X daily push to archive

Success criteria used for performance verification are derived from the following requirements: (Provisional)

DADS1235#B, DADS1472#B, DADS1640#B, DADS2778#B, DADS2780#B, DADS2900#B, DADS3000#B, DADS3100#B, DADS3110#B, DADS3120#B, DADS3125#B, DADS3126#B, DADS3135#B, EOSD1015#B, EOSD1030#B, EOSD1050#B, EOSD1060#B, EOSD1070#B, EOSD1080#B, EOSD1085#B, IMS-1780#B, IMS-1785#B, IMS-1790#B, PGS-1300#B, PGS-1301#B, PGS-1315#B

Test Configuration: TBD

TBD

EXHIBIT EGS 11-1 EGS Science Data System Performance Test Configuration

Participants and Support Requirements:

Participants:

EDOS Operations personnel

DAAC M&O personnel

EGS I&T Test Coordinator

Communications: TBD

Voice: All operational circuits

Data: All operational circuits

Equipment and Hardware:

Hardware: TBD

Software: TBD

Test Tools: TBD

LoadRunner ???

TEST DATA: TBD

Description/ Characteristics	Source	File/Script Name - Physical loc.
Test Case 1: Test data for daily science operations performance verifications test		
TBD		
Test Case 2: Test data for science data product generation -performance during exceptions handling		
TBD		
Test Case 3 etc.		
TBD		

Test Case Descriptions

Test Configuration: Each DAAC will be configured for the daily operational activities based on the science operations plan and the technical baseline. All hardware, software, and PGEs will be installed and operations supported by the M&O Personnel. The DAAC is scheduled to receive L0 and expedited data from EDOS, Landsat 7 L0R data from LPS, and ancillary data as required for product generation from the designated sources. Test data files (TBD) for use in data access, browse, manipulation, and distribution are made available on the ECS archives at the DAAC. V0 at the DAAC is accessible to ECS for user access. For performance testing of user access/data manipulation/data distribution functions, TBD user terminals, are provided with operations personnel. It may be possible to use tools like LoadRunner for this purpose (TBD).

Test Execution: The DAAC will be operational in the configuration given above and all the scheduled daily operations will be running during the complete duration of all the test cases identified for this test. The execution of the tests will be aimed at verifying the performance requirements rather than verification of daily operations functions, which are verified in EGS 10 and earlier tests. However, any failures or errors in the operational functions will be recorded for appropriate actions.

Test Case 1: Daily science operations performance verifications test

1a.) Ingest, archival and data product generation and archival: This test verifies that the higher-level products are generated within the specified performance limits.

1b.) Data access and manipulation: This test verifies performance of user access, search, and browse, functions and data subsetting and subsampling.

1c.) Data distribution: This test verifies the performance of product ordering services, electronic data distribution, and data distribution on physical media.

(1a, 1b, and 1c, are executed concurrently)

Test case 2: Science data product generation during exception handling

This test verifies performance of ingest, archival, and product generation during exception conditions like delay/error/nonavailability of ancillary data or other products required by the PGEs.

Test Case 3: Landsat 7 data distribution

This test verifies that specified volume of Landsat 7 data can be distributed (DADS3110#B).

Test Case 4: Timely availability of archived data to network

This Test verifies the capability of the system to deliver the archived data to the network within specified time limits. (DADS3125#B, DADS3126#B).

Test Case 5: Data search and order involving more than one DAAC

This test verifies the performance capabilities of search and order and distribution of data archived in more than one DAAC.

Test Case 6: User pull up to 2X daily push to the archive

This test verifies the capability of user pull data up to two times the normal daily archival volume per day.

Test Procedures (TBD)

(from TMDB)

Appendix: Test Package Requirements Summary

(from TMDB)